II.   STATUS OF THE CLAIMS

Claims 1-17, 19-27, 29-38, 40-42, 44-56 are pending in this application, Claims 1, 6, 9 and 11 being in independent form. Claims 1, 6, 8, 9, 11 and 41 have been amended. Claims 18, 28, 39 and 43 have been previously canceled without prejudice.

A.   Rejections under 35 U.S.C. § 101

Claims 1-56 were rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter.

B.   Rejections under 35 U.S.C. § 103

Claims 6-9, 20-27, 29-38, 40-42, and 49-51, and 54-55 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,868,669 (the "'669 Patent") in view of U.S. Patent No. 6,050,940 ("Braun").

Claims 1, 3-5, 10-13, 15-19, 43-48, 52-53 and 56 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over the '669 Patent in view of U.S. Patent No. 6,149,585 ("Gray").

Claims 2 and 14 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over the '669 Patent in view of Gray and further in view of U.S. Patent No. 6,598,035 ("Branson").

Applicant notes that the Patent Office has not continued its prior rejection of Claims 28 and 39 under 35 U.S.C. §103(a) as allegedly unpatentable over the '669 Patent in view of Branson.

III.   OBJECTIONS

The Patent Office objected to the specification because as failing to provide antecedent basis for the claimed subject matter. Applicant believes that objection on such grounds is improper; however, to the extent such objection is related to the Patent Office's rejection under § 101, Claims 1, 6, 9 and 11 have been amended and are believed to obviate the objection.

IV.   SUMMARY OF TRAVERSES

      A.   Rejections under 35 U.S.C. § 101

Claims 1-17, 19-27, 29-38, 40-42 and 44-56 recite a device and steps for producing a disease diagnosis, which is a concrete and tangible result. Furthermore, the Claims are tied to a particular machine.

      B.   Rejections under 35 U.S.C. § 103

Claims 1 and 11 recite limitations which are not taught or suggested by the '669 Patent or Gray, either alone or in combination. All other Claims rejected under 103 depend from Claims 1 or 11. The Patent Office has therefore failed to establish a prima facie case of obviousness.

V.   TRAVERSES

      A.   Rejections under 35 U.S.C. § 101

The Patent Office rejected Claims 1-17, 19-27, 29-38, 40-42 and 44-56 under 35 U.S.C. §101 as directed to non-statutory subject matter. Applicant respectfully traverses. Claims 1, 6, 9 and 11 are directed to statutory subject matter as the Claims are tied to a particular machine. Furthermore, Claims 1, 6, 9 and 11 produce a diagnosis of a disease, which is a useful, concrete and tangible result.

In addition to Applicant's previous arguments, FIG. 35 specifically discloses SERVERS (3508) and a PORTABLE PC (3526). SERVERS (3508) and PORTABLE PCs (3526) are "computing devices." The Patent Office has not provided any support for the position that a specification that discloses "SERVERS" (3508) and a "PORTABLE PC" (3526) does not support "computing devices."

While Applicant continues to maintain that rejection under § 101 is improper, Applicant has amended Claims 1, 6, 9 and 11 and believes the Claims are directed toward statutory subject matter (and also fully supported by the specification which is properly a rejection under § 112, though Applicant continues to maintain that "computing device" is fully supported and would be understood by those skilled in the art).

Dependent claims 2-5, 12-19, 43-48, 52-53 and 56 are all presented for analysis based on independent claims 1, 6, 9 and 11.

B.   Rejections under 35 U.S.C. § 103

The Patent Office rejected Claims 1, 3-5, 10-13, 15-19, 43-48, 52-53 and 56 under 35 U.S.C. § 103(a) as unpatentable over the '669 Patent in view of U.S. Patent No. 6,149,585 (filed October 28, 1998) (hereinafter "Gray").

Applicant respectfully traverses. "The PTO has the burden under section 103 to establish a prima facie case of obviousness." *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). "To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." *In re Ryoka*, 180 USPQ 580 (C.C.P.A. 1974). See also *In re Wilson*, 165 USPQ 494 (C.C.P.A. 1970). Further, "[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." (MPEP § 2143). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR v. Teleflex*, 550 U.S. 398, 418, 127 S. Ct. 1727, 1741.

"Dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The Patent Office has failed to show how the references, either alone or in combination, teach or suggest all the claim limitations. The Patent Office has also failed to show an explicit reason, suggestion, or motivation to modify the disclosure of the '669 Patent, Gray, Braun or Branson.

i.   The references do not teach or suggest Claim 6

Claim 6 recites:

An object based automated diagnostic system comprising:
    a server; and
    non-transitory computer executable program code, configured to execute on the server, wherein the server is configured to:

execute a plurality of diagnostic objects which interact to receive input from a user and, as a result of said interaction, determine a diagnosis of a patient, wherein the objects include at least two diagnostic objects comprising:

a disease object processing data indicative of an abnormal health state or disease, a symptom object processing data indicative of a patient sign, complaint, finding, or test result, a valuator object processing data indicative of a value of a symptom of the patient, a question object processing data indicative of questions to ask the patient specific to a specific symptom of the patient, a node object processing data indicative of a single well-defined question to the patient; and

a candidates object processing data indicative of candidate diseases for diagnosis of the patient, wherein the objects are arranged in a hierarchical relationship such that the result of one of the objects is input to another of the objects; and

assign a new name for a symptom object that is reused,

wherein at least one of the diagnostic objects directly invokes another of the diagnostic objects in a computer-based medical diagnostic system so as to output a diagnosis of a patient based on the prior object invocation,

wherein each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data.

For all of the reasons set forth in Applicant's responses to previous Office Actions, the Patent Office has not shown how the references teach or suggest Claim 6. Furthermore, Claim 6 includes the feature:

- "assign a new name for a symptom object that is reused . . . ."

In addition, the Patent Office stated:

> Illif and Gray disclose the claimed subject matter . . . except assigning a new name for a symptom object that is reused. However, Branson teaches assigning a new name for a symptom object that is reused (fig. 16 and lines 17-39 of col. 20) in order to provide customization and extension of an object (lines 21-57 in col. 4).

The Patent Office appears to be characterizing "customization and extension of certain aspects of the 00 solution" (Branson, col.4,ll.46-47) as "assigning a new name for a symptom object . . . ." (Present invention). The Patent Office has not provided any support for such characterization. Specifically, Branson teaches "frameworks provide an 00 programming solution that can be customized and extended to address individualized requirements that change over time." (Branson, col.4,ll.50-52). "The extensible function . . . is that part of the framework that has been explicitly designed to be customized and extended by the framework purchaser as part of its implementation." (Branson, col.4,ll.34-39). The Patent Office has not shown than Branson teaches a "server . . . assigning a new name for a symptom object" (Present invention) because Branson teaches "the framework . . . customized and extended by the framework purchaser . . . ." (Emphasis added). Furthermore, in regards to FIG. 16, Branson teaches "the class Condition is shown with an 'inheritance' relationship of classes called Dizziness, Fever, Numbness, and Rash[,]" and "sub-type classes of the Rash condition class that are called RasyType1, RashTpe2, and RashType3." (Branson, col.20,ll.17-21). Nowhere does Branson teach "assigning a new name" and in fact the names used appear to be static throughout.

On that basis, the Patent Office has not established a prima facie case for anticipation as to Claim 6. Claims 7-8, 20-27, 29-30, 49-50 and 54 depend from Claim 6. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established that the cited references anticipate, teach or suggest Claims 7-8, 20-27, 29-30, 49-50 and 54. Furthermore, Applicant continues to assert all of the arguments previously presented. Applicant respectfully requests allowance of the Claims.

ii. The references do not teach or suggest Claim 9

Claim 9 recites

An object based automated diagnostic system comprising:
a server; and
non-transitory computer executable program code, configured to execute on the server, wherein the server is configured to:
execute a plurality of diagnostic objects which interact to receive input from a user and, as a result of said interaction, determine a diagnosis of a patient, wherein the diagnostic objects include at least a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease;
execute a plurality of symptom objects, each symptom object processing data indicative of a patient sign, complaint, finding, or test result, and a plurality of valuator objects, each valuator object processing data indicative of a value of a symptom of the patient; and
assign a new name for a symptom object that is reused,
wherein at least some of the diagnostic objects perform their own tasks and directly call upon other diagnostic objects to perform their tasks at the appropriate time in a computer-based medical diagnostic system so as to output a diagnosis of a patient, and
wherein each object has corresponding data and processes, and wherein the data is encapsulated so that other objects only see the processes of a particular object that can be invoked to access the data.

For all of the reasons set forth in Applicant's responses to previous Office Actions, the Patent Office has not shown how the references teach or suggest Claim 9. Furthermore, Claim 9 includes the feature:

- "assign a new name for a symptom object that is reused . . . ."

In addition, the Patent Office stated:

> Illif and Gray disclose the claimed subject matter . . . except assigning a new name for a symptom object that is reused. However, Branson teaches assigning a new name for a symptom object that is reused (fig. 16 and lines 17-39 of col. 20) in order to provide customization and extension of an object (lines 21-57 in col. 4).

The Patent Office appears to be characterizing "customization and extension of certain aspects of the OO solution" (Branson, col.4,ll.46-47) as "assigning a new name for a symptom object . . . ." (Present invention). The Patent Office has not provided any support for such characterization. Specifically, Branson teaches "frameworks provide an OO programming solution that can be customized and extended to address individualized requirements that change over time." (Branson, col.4,ll.50-52). "The extensible function . . . is that part of the framework that has been explicitly designed to be customized and extended by the framework purchaser as part of its implementation." (Branson, col.4,ll.34-39). The Patent Office has not shown than Branson teaches a "server . . . assigning a new name for a symptom object" (Present invention) because Branson teaches "the framework . . . customized and extended by the framework purchaser . . . ." (Emphasis added). Furthermore, in regards to FIG. 16, Branson teaches "the class Condition is shown with an 'inheritance' relationship of classes called Dizziness, Fever, Numbness, and Rash[,]" and "sub-type classes of the Rash condition class that are called RasyType1, RashTpe2, and RashType3." (Branson, col.20,ll.17-21). Nowhere does Branson teach "assigning a new name" and in fact the names used appear to be static throughout.

On that basis, the Patent Office has not established a prima facie case for anticipation as to Claim 6. Claims 10, 31-38, 40-42, 51 and 55 depend from Claim 6. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established that the cited references anticipate, teach or suggest Claims 10, 31-38, 40-42, 51 and 55. Furthermore, Applicant continues to assert all of the arguments previously presented. Applicant respectfully requests allowance of the Claims.

iii. The references do not teach or suggest Claim 1

Claim 1 recites:

A method of diagnosing a patient, performed by a server, through the reuse of medical script objects used in the automated diagnosis or management of a medical condition, the method comprising:

retrieving a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease;

retrieving a plurality of symptom objects, each symptom object processing data indicative of at least a patient sign, complaint, finding, or test result;

associating a disease object with at least one symptom object;

assigning a weight for each symptom object, wherein a particular disease object includes a preferred weight for one or more preferred symptom objects and an alternative weight for one or more related alternative symptom objects, wherein the preferred symptom objects and the alternative symptom objects for a particular preferred symptom object are selected from a set of archived symptom objects that are available for reuse;

using one of the archived symptom objects in conjunction with a plurality of disease objects;

receiving, via interactive dialogue between a user and the server a patient symptom input;

associating the patient symptom input with at least one symptom object;

selecting at least one disease object applicable to a patient based on at least one of the preferred symptom object or the alternative symptom object;

invoking a preferred symptom object or one of the related alternative symptom objects for the selected

20

> disease object so as to determine a diagnosis of a patient based on the object invocation;
>
> assigning a new name for a symptom object that is reused; and
>
> outputting a diagnosis based at least one of the invoking or selecting,
>
> wherein each object comprises an encapsulated combination of data and processes that manipulate the data.

For all of the reasons set forth in Applicant's responses to previous Office Actions, the Patent Office has not shown how the references teach or suggest Claim 1. Furthermore, Claim 1 includes the feature:

- "assigning a new name for a symptom object that is reused . . . ."

For all of the reasons set forth in Applicant's responses to the previous Office Actions, the Patent Office has not shown how the '669 Patent or Gray, either alone or in combination, teach or suggest Claim 1. Applicant continues to assert all of the arguments previously presented.

In addition, the Patent Office stated:

> Illif and Gray disclose the claimed subject matter . . . except assigning a new name for a symptom object that is reused. However, Branson teaches assigning a new name for a symptom object that is reused (fig. 16 and lines 17-39 of col. 20) in order to provide customization and extension of an object (lines 21-57 in col. 4).

The Patent Office appears to be characterizing "customization and extension of certain aspects of the OO solution" (Branson, col.4,ll.46-47) as "assigning a new name for a symptom object . . . ." (Present invention). The Patent Office has not provided any support for such characterization. Specifically, Branson teaches "frameworks provide an OO programming solution that can be customized and extended to address individualized requirements that change over time." (Branson, col.4,ll.50-52). "The extensible function . . . is that part of the framework that has been explicitly designed to be customized and extended by the framework purchaser as part of its implementation." (Branson, col.4,ll.34-39). The Patent Office has not shown

than Branson teaches a "server . . . assigning a new name for a symptom object"   (Present   invention)   because   Branson   teaches   "the framework . . . customized and extended by <u>the framework purchaser</u> . . . ." (Emphasis added).   Furthermore, in regards to FIG. 16, Branson teaches "the class Condition is shown with an 'inheritance' relationship of classes called Dizziness, Fever, Numbness, and Rash[,]" and "sub-type classes of the Rash condition class that are called RasyType1, RashTpe2, and RashType3." (Branson, col.20,ll.17-21).   Nowhere does Branson teach "assigning a new name" and in fact the names used appear to be static throughout.

On that basis, the Patent Office has not established a prima facie case for obviousness as to Claim 1. Claims 3-5, 19, 45-48 and 53 depend from Claim 1. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established a prim facie case for obviousness as to Claims 3-5, 19, 45-48 and 53.   Furthermore, Applicant continues to assert all of the arguments previously presented. Applicant respectfully requests allowance of the Claims.

iv.   The references do not teach or suggest Claim 11

Claim 11 recites:

> A method of diagnosing a patient through the reuse of medical script objects performed by a server in the automated diagnosis or management of a medical condition, the method comprising:
>> executing a plurality of disease objects, each disease object processing data indicative of an abnormal health state or disease and each disease object associated with a plurality of symptom objects, each symptom object processing data indicative of a patient sign, complaint, finding, or test result;
>> receiving, via interactive dialogue between a user and the server, a patient symptom input;
>> associating the patient symptom input with at least one symptom object;
>> assigning a weight for one or more symptoms, wherein a particular disease object includes a preferred weight for one or more preferred symptoms and an

alternative weight for one or more alternative symptoms, wherein the alternative symptoms for a particular preferred symptom are selected from a set of archived symptom objects that are available for reuse, and wherein the particular preferred symptom has one or more related alternative symptoms that represent different approaches for eliciting further diagnostic information related to a same patient health condition;

using one of the archived symptom objects in conjunction with a plurality of disease objects;

assigning a new name for a symptom object that is reused;

selecting from the plurality of disease objects, a disease object applicable to a patient;

invoking a preferred symptom object or one of the related alternative symptom objects for the selected disease object so as to output a diagnosis of a patient based on the object invocation; and

outputting a diagnosis based at least one of the invoking or selecting.

For all of the reasons set forth in Applicant's response to the previous Office Action, the Patent Office has not shown how the '669 Patent or Gray, either alone or in combination, teach or suggest Claim 11. Furthermore, Claim 11 includes the feature:

- "assigning a new name for a symptom object that is reused . . . ."

In addition, the Patent Office stated:

Illif and Gray disclose the claimed subject matter . . . except assigning a new name for a symptom object that is reused. However, Branson teaches assigning a new name for a symptom object that is reused (fig. 16 and lines 17-39 of col. 20) in order to provide customization and extension of an object (lines 21-57 in col. 4).

The Patent Office appears to be characterizing "customization and extension of certain aspects of the OO solution" (Branson, col.4,ll.46-47) as "assigning a new name for a symptom object . . . ." (Present invention). The Patent Office has not provided any support for such characterization. Specifically, Branson teaches "frameworks provide an OO programming solution that can be customized and extended to address individualized requirements

that change over time." (Branson, col.4,ll.50-52). "The extensible function . . . is that part of the framework that has been explicitly designed to be customized and extended by the framework purchaser as part of its implementation." (Branson, col.4,ll.34-39). The Patent Office has not shown than Branson teaches a "server . . . assigning a new name for a symptom object" (Present invention) because Branson teaches "the framework . . . customized and extended by the framework purchaser . . . ." (Emphasis added). Furthermore, in regards to FIG. 16, Branson teaches "the class Condition is shown with an 'inheritance' relationship of classes called Dizziness, Fever, Numbness, and Rash[,]" and "sub-type classes of the Rash condition class that are called RasyType1, RashTpe2, and RashType3." (Branson, col.20,ll.17-21). Nowhere does Branson teach "assigning a new name" and in fact the names used appear to be static throughout.

On that basis, the Patent Office has not established a prima facie case for obviousness as to Claim 11. Claims 12-17, 44, 52 and 56 depend from Claim 11. Dependent Claims contain all of the limitations of the Claims from which they depend. Therefore, the Patent Office has not established a prim facie case for obviousness as to Claims 12-17, 44, 52 and 56. Furthermore, Applicant continues to assert all of the arguments previously presented. Applicant respectfully requests allowance of the Claims.

Furthermore, Applicant respectfully traverses all the arguments made in the office action that were not specifically addressed herein, and continues to assert all arguments presented in all prior Office Actions.

VI.   CONCLUSION

In light of the forgoing amendments and arguments, Applicant hereby requests reconsideration of the Claims, and earnestly solicits a Notice of Allowance.

Respectfully submitted,

Dated: May 23, 2012   /shane r. theilen/
                                                       _____
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